

81589

07.005/60/000/06/002/00
EO30/E112

Influence of Polar Additives on the Quality of Lithium-Based Greases in Silicone Fluids

There are 3 figures, 4 tables and 10 Soviet references.

ASSOCIATION: Moskovskiy neftemaslozavod i VNII NP
(Moscow Petroleum-Lubricant Works, and VNII NP)

Card 3/3

GROMOVA, L.G.; SHEKHOYAN, L.S.; KONDRAT'YEV, V.M.; ALASHKEVICH, M.L.

BM-7 oil for high-vacuum pumps. Nefteper. i neftekhim.
no.2:8-10 '63. (MIRA 17:1)

1. Moskovskiy neftemaslozavod.

AUTHORS: Gromova, L.G., Dzhabar-Zade, R.M. S/794/62/000/001/009/010

TITLE: Standard program for the integration of systems of ordinary differential equations by the Runge-Kutta method.

SOURCE: Vychislitel'nyye metody i programmirovaniye; sbornik rabot Vychislitel'nogo tsentra Moskovskogo universiteta. no. 1. Ed. by N. P. Trifonov, G. S. Roslyakov, and Ye. A. Zhogolev. [Moscow] Izd-vo Mosk. un-ta, 1962, 278-292.

TEXT: The paper constitutes a contribution to the setting up of an ensemble of standard computing methods comprising several variants which have different characteristics relative to the speed of operation, the volume of the memory required, the simplicity of its use, universality, etc., and which, therefore, may each be more directly suitable for a given problem. The program proposed here is intended for the numerical integration of systems of m ordinary differential equations of the type $dy_i/dx = f_i(x, y_1, y_2, \dots, y_n)$, where $i=1, 2, \dots, m$, or its equivalent vector expression, $d\vec{y}/dx = \vec{F}(x, \vec{y})$, with the initial conditions $\vec{y}|_{x=x_0} = \vec{y}_0$, according to the Runge-Kutta formulas of the fourth order of accuracy. The process of numerical integra-

Card 1/2

Standard program for the integration of....

S/794/62/000/001/009/010

tion consists of successive stages, in each of which the known value of the solution $\vec{y}(x_n)$ and the magnitude of the step h_n are used to calculate the value $\vec{y}(x_{n+1})$ according to the Runge-Kutta formula. The computation program, the algorithm of the automatic selection of the step, the distribution of the operational circuit units, the logical program scheme, and the nonstandard operators used are described. There is 1 Russian-language Soviet reference: Ryabenkiy, V.S., Filippov, A. F., Ob ustoychivosti raznostnykh skhem (On the stability of difference schemes), Gostekhizdat, Moscow, 1956.

Card 2/2

L 18045-63

EWI(d)/FCC(w)/BDS AFFTC/IJP(C)

ACCESSION NR: AP3001035

S/0055/63/000/003/0025/0037

AUTHOR: Gromova, L. G.

TITLE: Weak lacunae of hyperbolic equations with two independent variables

SOURCE: Moscow. Universitet* Vestnik. Seriya I. Matematika, mekhanika, no. 3, 1963, 25-37

TOPIC TAGS: weak lacuna, hyperbolic differential equation

ABSTRACT: Lacunae of linear hyperbolic equations

$$L\left(\frac{\partial}{\partial t}, \frac{\partial}{\partial x_1}, \dots, \frac{\partial}{\partial x_n}\right)u = 0 \quad (1)$$

are those regions lying in the base of the characteristic cone (for $t = \text{const}$) and having the property that any sufficiently smooth changes of initial data in these regions do not influence the value of the solution at the vertex of the characteristic cone. The first part of the paper states necessary and sufficient conditions: In order for an interval in the base of the characteristic triangular function

$$u_{xx} - u_{tt} + a(x, t)u_x + b(x, t)u_t + c(x, t)u = 0 \quad (2)$$

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L 18045-63

ACCESSION NR: AP3001035

to be a weak lacuna of first order, it is necessary and sufficient that

$$1) b(x, t) = 0; \quad 2) a \text{ does not depend on } t; \quad 3) c = \frac{a^2}{4} + \frac{a_x}{2}. \quad (3)$$

The second part proves that the equation $L(\frac{\partial}{\partial t}, \frac{\partial}{\partial x})u = cu$ (where $c = \text{const}$, L is a linear homogeneous hyperbolic operator of high order with constant coefficients) has no weak lacunae. The weak lacuna is a lacuna for derivatives of solutions of some order with respect to t . The author expresses his deep gratitude to S. A. Gal'pern for his help. Orig. art. has 22 formulas and 1 diagram.

ASSOCIATION: Moscovskiy universitet kafedra differentsial'nykh uravneniy
(Moscow University, Chair of Differential Equations)

SUBMITTED: 07Aug62

DATE ACQ: 17Jun63

ENCL: 00

SUB CODE: MM

NO REF SOV: 002

OTHER: 001

Card 2/2

(A) L 8499-66 ENT(m)/ENP(j) RM

ACC NR: AP5028479

SOURCE CODE: UR/0286/65/000/020/0064/0064

AUTHORS: Levitin, I. A.; Gromova, L. G.; Petrova, V. D.; Ioffe, A. I.; Marchenko, Ye. D. ⁴⁴ ⁴⁴ ⁴⁴ ⁴⁴

ORG: none

TITLE: A method for obtaining rubbers. Class 39, No. 175644 ¹⁵

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 64

TOPIC TAGS: rubber, ozone, antiozonant, cerisin, paraffin, petrolatum/ AF antiozonant mixture

ABSTRACT: This Author Certificate presents a method for obtaining rubber by applying a waxlike antiozonant. To increase the resistance of rubber to ozone, mixture AF, consisting of natural cerisin (30-70 wt parts), synthetic cerisin (20-5 wt parts), paraffin (40-10 wt parts), and petrolatum (10-0 wt parts), is used as the waxlike antiozonant. Mixture AF may be applied together with chemical antiozonants.

SUB CODE: 07, 11/ SUBM DATE: 11Sep62

Card 1/1

UDC: 678.7.048
665.436.432

000000, 1.00, 0.00, 0.00

Electrophoretic picture of the proteins of the liver tumor and brain in white mice with transplanted cancer. Tr. 14: 6X
no. 4: 199-206 '64. (RUBB 18:9)

1. Iz Kafedry fiziologičkega znanja (197.-1980. št. 1. Glasnik) Opatovske medicinske fakultete.

YELSUKOV, M.P.; GROMOVA, L.I.; YUSHONKOVA, N.P.

Converting the spring field pea (*Pisum arvense*) into the winter field pea. *Agrobiologiya* no.6:800-805 N-D '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kormov imeni V.R. Vil'yams, st. Lugovaya, Moskovskoy oblasti.
(Field pea)

YELSUKOV, M.P.; ~~GROMOVA~~, L.I.; NOVIKOVA, A.V.

Pinching back and defoliation of forage beans in Moscow Province.
Zemledelie 24 no.7:31-35 J1 '62. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kormov imeni
V.R. Vil'yamsa. 2. Chlen-korrespondent Vsesoyuznoy akademii
sel'skokhozyaystvennykh nauk imeni Lenina (for Yelsukov).
(Moscow Province—Beans)
(Defoliation)

GAVRILOV, K.I., dotsent; PARFENOV, M.L., assistant; GEOMOVA, L.I., assistant

Search for new medicinal plants in the Stavropol flora yielding
the antibiotics phytoncides. Uch. zap. Stavr. gos. med. inst.
12:159-160 '63. (MIRA 17:9)

1. Kafedra obshchey biologii (zav. kafedroy dotsent K.I. Gavrilov)
Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

GROMOVA. L.I., assistant

Comparative evaluation of the stimulating and inhibitive properties of aqueous root extracts from the plants of the Family Araliaceae. Uch. zap. Stavr. gos. med. inst. 12: 163-164 '63. (MIRA 17:9)

1. Kafedra obshchey biologii (zav. kafedroy dotsent K.I. Gavrilov) Stavropol'skogo gosudarstvennogo meditsinskogo instituta.

GROMOVA, L.S.

1235. Methods of determination of rubber-cord bond strength. R. V. UZINA, L. S. GROMOVA, S. A. YAGUL'YVA. 'Prochnost' Bvyazi . . . , 1964, p. 184-95. (Vses. Khim. Obschch. im. D. I. Mendel'eeva, Dec., 1964). The following methods are compared: (i) stripping of a single thread of cord from the rubber under static compression; (ii) stripping of a single thread of cord from the rubber under repeated compression; (iii) pulling out a single thread of cord before and after fatigue, and testing of rubber fabric models under repeated shear; and (iv) testing of rubber fabric models under repeated compression. The results from (i), (iii) and (iv) correspond with each other and with the efficiency of the tyres on the test bench. Method (ii) is sensitive to various changes of mix and in the technology of preparation of the impregnant. The rubber used is mentioned incidentally as SKII. There are 7 references. —64492

Distr: 4E2c(j)

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of Medical Sciences USA) (IL, 11-00, 117)

GROMOVA, L.S.

Pleurectomy in acute tuberculous empyema. Eksper. khir. 5 no.4:
48-49 Je-Ag '60. (MIRA 13:12)
(TUBERCULOSIS) (PLEURA—SURGERY)

GROMOVA, L.S.

Restorative surgery in patients with armored pleura following incorrect or combined therapy with artificial pneumothorax. Probl. tub. 38 no.3:56-61 '60. (MIRA 14:5)

1. Iz khirurgicheskoy kliniki (zav. - chlen-korrespondent AMN SSSR prof. L.K.Bogush) Instituta tuberkuleza AMN SSSR (dir. - chlen-korrespondent AMN SSSR prof. N.A.Shmelev).
(PNEUMOTHORAX) (PLEURA--SURGERY)

BOGUSH, Lev Konstantinovich; GROMOVA, Lidiya Samoylovna; KAZIN, V.P.,
red.; ZAKHAROVA, A.I., tekhn. red.

[Surgical treatment of tuberculous empyemata] Khirurgicheskie
lechenie tuberkuleznykh empiem. Moskva, Medgiz, 1961. 131 p.
(EMPYEMA) (MIRA 15:2)

ALTYPANMAKOV, Anton; SHIFMAN, N.D.[translator]; BOGUSH, L.K., red.;
GROMOVA, L.S., red.; MIRONOVA, A.M., tekhn. red.

[Bronchoscopy and bronchography] Bronkhoskopiia i bronkhografii. Pod red. L .K.Bogusha. Moskva, Medgiz, 1961. 126 p.

(MIRA 15:4)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Bogush).

(BRONCHI—RADIOGRAPHY) (BRONCHOSCOPY)

AVERBAKH, Mikhail Mikhaylovich; GROMOVA, L.S., red.; PETLOVA, R.K.,
tekhn. red.

[Tuberculomas of the lung; their clinical anatomical analysis,
pathological anatomy, pathogenesis and classification accord-
ing to resection materials] Tuberkulomy legkogo; kliniko-
anatomicheskii analiz, patologicheskaya anatomiya, patogenez i
klassifikatsiya po materialam rezeksii. Moskva, Medgiz,
1962. 341 p. (MIRA 15:11)

(LUNGS---TUMORS) (TUBERCULOSIS)

GROMOVA, L.S.

Use of new instruments for the operations of decortication of the lung and pleurectomy. Trudy NIIKHAI no.5:253-257 '61. (MIRA 15:8)

1. Iz khirurgicheskoy kliniki Instituta tuberkuleza AMN SSSR.
(LUNGS--SURGERY) (PLEURA--SURGERY)
(SURGICAL INSTRUMENTS AND APPARATUS)

BOGUSH, L.K., prof., red.; SHEBANOV, F.V., prof., red.; GROMOVA,
L.S., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Surgical treatment of patients with tuberculosis] Khirurgicheskoe lechenie bol'nykh tuberkulezom legkikh; trudy. Moskva, Medgiz, 1963. 154 p. (MIRA 16:8)

1. Vsesoyuznoye soveshchaniye khirurgov i ftiziatrov, Moscow, 1962.

(TUBERCULOSIS) (SURGERY)

GROMOVA. L. S., kand.med.nauk.

Morphology of the visceral pleura and pleural deposits surgically removed in rigid pneumothorax. Probl. tub. no.1: 84 '63. (MIRA 16:5)

1 Iz khirurgicheskogo otdeleniya (zaveduyushchiy - chlen korrespondent AMN SSSR prof. L.K. Bogush) Tsentral'nogo instituta tuberkuleza, (direktor - deyatel'nyy chlen AMN SSSR prof. N.A. Shmelev) Ministerstva zdravookhraneniya SSSR, Moskva.
(PLEURA) (PNEUMOTHORAX)

SEVEROV, V.S. (Moskva, I-128, ul. 6-ya vorsta, d.2., kv. 33); SHIFMAK, N.D.
GROMOVA, L.S. (Moskva)

Use of the N.M.Titarenko aspirator in a clinic for lung sur-
gery. Grud. khir. 5 no.2:117-119 Mr-Ap'63 (MIRA 17:2)

RADKEVICH, R.A., prof.; UVAROVA, O.A., doktor med.nauk; UTKIN, V.V., kand.
med.nauk; GROMOVA, L.S., kand.med.nauk; DYATLOVA, N.S., kand.med.nauk

Review of the book "Collection of transactions of the Republic
Scientific Research Institute of Tuberculosis of the Ministry of
Public Health of the Georgian S.S.R.; Vol.10." Probl. tub. 41
no.10:88-90 '63. (MIRA 17:9)

GROMOVA, M. I.

"On Ecologic Characteristics of Para typhoid Pathogenic Agents in Calves in Omsk and Novosibirsk Oblasts." Omsk State Veterinary Inst. of the Min. Higher Education USSR, Omsk, 1955. (Dissertation for the Degree of Candidate of Biological Sciences)

SO: Knizhnaya Lotopis', No. 22, 1955, pp 93-105

S/075/62/017/002/002/004
B107/B138

AUTHORS: Peshkova, V. M., Gromova, M. I., and Aleksandrova, N. M.

TITLE: Successive spectrophotometric titration of thorium and of the sum of rare-earth elements

PERIODICAL: Zhurnal analiticheskoy khimii, v. 17, no. 2, 1962, 218 - 221

TEXT: A method was developed for determining about $10^{-5}M$ solutions of rare earths and of thorium with Komplexon III in the presence of arsenazo I as indicator. Thorium and the rare earths were successively determined in a sample. Compared with visual titration, sensitivity was improved by 3 to 4 orders. For the rare-earth determination, the following was added to solutions containing the rare earths in quantities between 10 μg and

1.0 mg: 10 ml solution of arsenazo I ($1 \cdot 10^{-5}M$), 1.0 ml of 0.1 N hydrochloric acid, 3 ml of 25 % urotropine solution (to obtain pH 6.6) and

5 ml of 1 % ascorbic acid (to reduce Ce^{4+}). The product was then topped up to 100 ml and mixed. 20 ml of the mixture was titrated in a cuvette. After adding 0.1 ml of Komplexon III solution at a time the optical density was measured at 575 m μ . The end point was determined graphically.
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S/075/62/017/002/002/004
B107/B138

Successive spectrophotometric ...

Checks revealed an error of less than 1 %. Thorium was determined at pH 2. It is important that the indicator concentration be at least as high as that of thorium. The following was added to a solution with 20 µg to 0.5 mg of thorium; a 20-ml solution of arsenazo I ($1 \cdot 10^{-4}M$) and 10 ml of 0.1 N hydrochloric acid. The further course is as above. Checks revealed an error of 0.3 %. The successive determination of thorium and the rare earths is possible for a Th:RE ratio between 1:1 and 1:100, but is not if Th:RE = 100:1. For determination purposes, 10 ml of 0.1 N hydrochloric acid and 20-ml solution of arsenazo I ($10^{-5}M$) were added to 0.02 - 0.05 mg of Th and 0.1 - 1.0 mg of RE, and topped up to 100 ml. 20 ml was titrated as above; 1 ml of 25 % urotropine solution was then added in the cuvette, and the rare earths were titrated. Checks revealed the same error limits as above. For comparison a monazite sample was analyzed by spectrophotometric titration and by the oxalate method. Yu. A. Chernikhov and F. V. Zaykovskiy are mentioned. There are 2 figures, 4 tables, and 7 references: 5 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Brill K., Holzer S., Rethy B., *Analyt. Chem.* 31. 1353 (1959); Wylie A., *J. Chem. Soc.* 1687 (1947).

Card 2/3

Successive spectrophotometric ...

S/075/62/017/002/002/004
B107/B138

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: May 18, 1961

Card 3/3

1. PESHKOVA, V. P., GRUYOVA, M. I.
2. USSR (600)
4. Rhenium
7. Colorimetric determination of rhenium with the use of dioximes. Vest.
Mosk. un. 7 no. 10, 1952
9. Monthly List of Russian Accessions, Library of Congress, March 1953. Unclassified.

Chemical, M. II.

Study of the complex compounds of neodymium, praseodymium, and erbium with citric acid by the spectrophotometric method. I. V. M. Pashkova and M. I. Gromova. Zhur. Neorg. Khim. 2, 1359-61 (1957). The process of complex formation for Nd, Er, and Pr with citric acid, and the effect of pH and the ratio of the reactants was studied by detg. changes in the absorption spectra for their salts. For Nd and Pr, the formation of 4 compds. was indicated by shifts in the max. The complexes of Pr are formed in a higher pH range than are those of Nd. The compds. of Pr are less stable in alk. media and decomp. at pH > 12.7. The formation of only 1 complex compd. was observed for Er.

Distr: 4E4J/4E3d

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PLASHIN M. V. M., GRANOVSKAYA, M. I., YEFIMOV, I. P., KAMAYEV, N. A.

"Spectrophotometric Investigation of Complex Compounds of Rare Earth Elements."

Rare Earth Elements (Extraction, Analysis, Use), Published by the Institute of Geochemistry and Analytical Chemistry Imeni V. I. Vernadskiy, 1958, Moscow.

(Chemical Faculty of the Moscow State University Im. M. V. Lomonosov), p. 277-283.

5 (2,3)

AUTHORS:

Gromova, M. I., Varaksina, I. P.,
~~Peshkova, V. M.~~

SOV/55-58-6-22/31

TITLE:

Spectrophotometric Investigations of the Complex Compounds of
Samarium With Citric Acid, Lactic Acid and Trioxylglutaric Acid
(Spektrofotometricheskoye issledovaniye kompleknykh soyedine-
niy samariya s limonnoy, molochnoy i triksiglutarovoy kislotami)

PERIODICAL:

Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki,
astronomii, fiziki, khimii, 1958, Nr 6, pp 171 - 179 (USSR)

ABSTRACT:

Various scientific treatises have permitted the statement (Refs
2,6,11-13) that the absorption spectra of the rare earth ele-
ments change in the course of the formation of the complexes.
The absorption maxima are displaced in dependence of the con-
centration of the complex forming addition and of the change
of the pH-value of the solution. This displacement permits con-
clusions to be drawn on the stability of the various complex
compounds of the rare earth elements as well as on the pH range
in which they exist. From this point of view the investigations
mentioned in the title were carried out. The SF-4 spectro-pho-
tometer was employed for the measurement of the absorption
spectra whilst the pH-value of the solutions was ascertained

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Spectrophotometric Investigations of the Complex SOV/55-58-6-22/31
Compounds of Samarium With Citric Acid, Lactic Acid
and Trioxylglutaric Acid

by means of the potentiometer LP-5, provided with a glass electrode. The initial solution was a samarium-perchlorate solution. In order to determine the exact position of the maxima of the samarium ion the initial solution was taken spectro-photometrically (The respective data are found in table 1 and in fig 1) and the data obtained were then compared with those of Prandtl, Ref 10. The molar absorption coefficients of the principal maxima agreed with data from publications (Refs 3,7,8,9). The further modifications of the samarium spectrum in the presence of the complex forming addition were observed on the wavelength of the absorption maximum $\lambda=401\text{m}\mu$. The spectra of solutions having different pH values and different ratios of samarium and complex-forming additions were taken (Figs 3 and 4). The limits of the pH values within which the various complex compounds are capable of existing, are compiled in the tables 3,4,5. In the pH-value field 1-12 2 complex compounds of samarium with the citric acid and also trioxylglutaric acid were ascertained, as well as one compound with the lactic acid in an acid medium. In basic media only hydroxide precipitates are

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Spectrophotometric Investigations of the Complex
Compounds of Samarium With Citric Acid, Lactic Acid
and Trioxylglutaric Acid

SOV/55-58-6-22/31

formed. The stability of these complex compounds was investigated with respect to hydroxyl ions, oxalate ions and fluoride ions. Photometrical data permitted the conclusion to be drawn that the compounds with citric acid and trioxylglutaric acid exhibit about the same degree of resistance, and that they are by far more resistant than the compound with the lactic acid. The authors thank G. K. Yeregin and L. I. Martynenko for placing the spectrally pure samarium salt at their disposal. There are 4 figures, 6 tables, and 17 references, 3 of which are Soviet.

ASSOCIATION: Kafedra analiticheskoy khimii (Chair for Analytical Chemistry)

SUBMITTED: April 15, 1958

Card 3/3

GROMOVA, M.I.; NOVITSKAYA-YANKOVSKAYA, T.

Spectrophotometric study of complex compounds of praseodymium with lactic acid. Vest. Mosk un. Ser. 2: Khim. 15 no.4:55-58 J1-Ag '60.
(MIRA 13:9)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.
(Praseodymium compounds) (Lactic acid)

FESHKOVA, Valentina Moiseyevna; GROMOVA, Margarita Ivanovna; ALIMARIN, I.P., prof., otv. red.; GOL'DENBERG, G.S., red.; LAZAREVA, L.V., tekhn. red.

[Practical manual on spectrophotometry and colorimetry] Prakticheskoe rukovodstvo po spetrofotometrii i kolorimetrii. Moskva, Izd-vo Mosk. univ., 1961. 172 p. (MIRA 15:1)

1. Chlen-korrespondent AN SSSR (for Alimarin).
(Spectrophotometry) (Colorimetry)

GROMOVA, M.I.; KHIL'MAN, Ya.I.; PESHKOVA, V.M.

Complex compounds of erbium with trihydroxyglutaric acid. Vest.
Mosk.Un.Ser.2: khim. 16 no.6:41-46 N-D '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet. Kafedra analiticheskoy
khimii.

(Erbium compounds)

(Glutaric acid)

GROMOVA, M.I., assistant

Controlling the water vole with bacteriological means.

Zashch. rast. ot vred. i bol. 7 no.10:26 0 '62.

(MIRA 16:6)

1. Kafedra mikrobiologii Omskogo veterinarnogo instituta.
(Tara District—Water voles—Biological control)

PESHKOVA, V.M.; GROMOVA, M.I.; ALEKSANDROVA, N.M.

Successive spectrophotometric titration of thorium and of the
sum of rare earth elements. Zhur.anal.khim. 17 no.2:218-221
Mr-Ap '62. (MIRA 15:4)

1. Lomonos Moscow State University.
(Thorium--Spectra) (Rare earths--Spectra)

GROMOVA, M.I.; PERELYAYEVA, G.N.

Complex formation in the system Benzoyl acetone - gadolinium -
chloroform - water studied by the distribution method. Vest.-
Mosk.un. Ser.2:Khim. 18 no.1:58-60 Ja-F '63. (MIRA 16:5)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.
(Gadolinium compounds)

L 29946-65 EWT(m)/EWP(t)/EWP(b) IJF(c) JD/JG

ACCESSION NR: AP4044080

S/0189/64/000/004/0057/0061

AUTHORS: Gromova, M.I.; Romantseva, T. I.; Peshkova, V. M.

28
27
B

TITLE: Using the absorption spectra of the dichloroxinates of praseodymium, neodymium and samarium for the determination of these elements

SOURCE: Moscow. Universitet. Vestnik. Seriya. 2. Khimiya, no. 4, 1964, 57-61

TOPIC TAGS: praseodymium, neodymium, samarium, spectrophotometric determination, dichlorohydroxyquinoline, rare earth dichloroxinate, extraction, coefficient of extinction, absorption spectrum

ABSTRACT: The spectrophotometric determination of praseodymium, neodymium and samarium, or mixtures of these, complexed with 5,7-dichlorohydroxyquinoline was investigated. Optimum extraction of these complexes from aqueous solutions with chloroform is in the pH 6.5 -7 to 8.5-10 range; below pH 6.5 complex formation is in progress. The rare earth salts were dissolved in dilute HClO₄, the reagent was

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ACCESSION NR: AP4044080

used as a 0.1% solution in 3N HCl. The absorption spectra of the rare earth dichloroxinates were obtained. All three complexes absorb strongly in the 395-400 millimicron region; Nd has several peaks, while Pr and Sm show no peaks in the 500-850 millimicron region; the Nd maximum at 581 millimicrons is most pronounced; Sm has a maximum at 1085 millimicrons. Concentrations of the elements in Nd-Pr and Nd-Sm mixtures were determined by solution of the equation $D = 1 \sum_{\lambda=1}^n \epsilon_{\lambda} \cdot c_{\lambda}$, where $n = 2$, $\lambda_1 = 581$ and $\lambda_2 = 640$ millimicrons for Nd-Pr, and $\lambda_1 = 581$ and $\lambda_2 = 1085$ millimicrons for Nd-Sm mixtures. The coefficients of extinction ϵ for the selected wave lengths (in millimicrons) for the various complexes: Pr, at $\lambda = 581$, $\epsilon = 10.34$ and at $\lambda = 640$, $\epsilon = 7.85$; Sm, at $\lambda = 1085$, $\epsilon = 5.0$ and at $\lambda = 581$, $\epsilon = 3.6$; Nd, at $\lambda = 581$, $\epsilon = 63.0$ and at $\lambda = 640$, $\epsilon = 7.8$. Because of the limited solubility of these rare earth complexes in chloroform, the determinable concentration of Nd in Pr and Sm is in the 1×10^{-4} to 5×10^{-4} M range (0.014-0.072 mg/ml of Nd in the presence of 0.12-0.07 mg/ml of Pr or 0.13-0.075 mg/ml of Sm). Pr and Sm cannot be determined in the presence of relatively large amounts of Nd. Orig. art. has: 2 tables and 3 figures.

Card 2/3

L 29946-65

ACCESSION NR: AP4044080

ASSOCIATION: MGU, Kafedra analiticheskoy khimii (Moscow State
University, Department of Analytical Chemistry)

SUBMITTED: 24Mar64

ENCL: 00

SUB CODE: 1C,OP

NR REF SOV: 001

OTHER: 009

Card 3/3

FESHKOVA, Valentina Moiseyevna; GROMOVA, Margarita Ivanovna;
AlIMARIN, I.P., prof., otv. red.; DERGACHEVA, Ye.G., red.

[Laboratory manual on spectrophotometry and colorimetry]
Prakticheskoe rukovodstvo po spektrofotometrii i kolori-
metrii. Izd.2., perer. i dop. Moskva, Mosk. univ., 1965.
227 p. (MIRA 18:12)

1. Chlen-korrespondent AN SSSR (for Alimarin).

ROMANTSEVA, T.I.; GROMOVA, M.I.; PESHEKOVA, V.M.

Spectrophotometric determination of neodymium in the presence
of praseodymium and samarium. Vest. Mosk. un. Ser. 2: Khim. 20
no.6:74-78 N-D '65. (MIRA 19:1)

1. Kafedra analiticheskoy khimii Moskovskogo universiteta.
Submitted March 22, 1965.

L 30227-66 EWP(j)/ENT(m)/EMP(t)/ETI IJP(s) RM/JD/JG

ACC NR: AP6013827

SOURCE CODE: UR/0189/65/000/006/0074/0078

AUTHOR: Romantseva, T. I.; Gromova, M. I.; Peshkova, V. M.

56
E

ORG: Chair of Analytical Chemistry, Moscow State University (Kafedra analiticheskoy khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Spectrophotometric determination of neodymium in the presence of praseodymium and samarium

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 6, 1965, 74-78

TOPIC TAGS: spectrophotometric analysis, neodymium, praseodymium, samarium, absorption spectrum, organometallic compound

ABSTRACT: Absorption spectra of complex compounds formed by neodymium, samarium and praseodymium with 7-iodo-8-hydroxyquinoline-5-sulfonic acid were studied. A strong hypsochromic shift of the absorption band of this reagent in alkaline media, combined with the bathochromic shift of the characteristic absorption maximum of the complex formed by this reagent with neodymium, creates favorable conditions for determining neodymium at λ_{\max} 581 m μ . Neodymium was determined in Nd-Pr and Nd-Sm pairs in water-alcohol solutions at pH 8.0-11.0, using two wavelengths: λ_1 581 m μ and λ_2 590 m μ . The data show that the method used permits a sufficiently accurate determination of neodymium in praseodymium and samarium in amounts of 0.0043-0.043 mg/ml (or $3 \cdot 10^{-5}$ -

UDC: 543.7

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L 30227-66

ACC NR: AP6013827

- $1 \cdot 10^{-4}$ M) at Nd:Pr(Sm) ratios of 1:99 to 1:8. Orig. art. has: 4 figures, 2 tables, 3 formulas.

SUB CODE: 07/

SUBM DATE: 22Mar65/

ORIG REF: 009/

OTH REF: 005

Card 2/2

CC

L 001/4-00 ENT(01/10-10-11 10:10 11

NR: AP6010716

SOURCE CODE: UR/0189/66/000/001/0073/0078

AUTHOR: Romantseva, T. I.; Gromova, M. I.; Pashkova, V. M.

ORG: Analytic Chemistry Department, Moscow State University (kafedra analiticheskoy khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Use of different variants of spectrophotometric measurements in the determination of erbium in holmium and thulium and of ytterbium in lutetium

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 1, 1966, 73-78

TOPIC TAGS: spectrophotometric analysis, erbium, holmium, thulium, ytterbium, lutetium

ABSTRACT: Continuing a study of the spectrophotometric analysis of rare earth mixtures for their individual components, the authors have compared different variants of the spectrophotometric method and attempted to show their applicability to the analysis of separate pairs of rare earth elements, taking as an example complex compounds of a series of elements of the yttrium subgroup with 7-iodo-8-hydroxyquinoline-5-sulfonic acid. Absorption spectra of water-alcohol solutions of complexes of erbium, holmium, thulium, ytterbium, and lutetium were studied. Erbium was determined in Er-Ho and Er-Tm pairs, and a statistical treatment of the results showed that the errors had a random character in the case of the Er-Tm pair, whereas in the case of Er-Ho the results were systematically high. However, Er was reliably determined in Ho by also

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UDC: 543.7

L 34374-66

ACC NR: AP6010716

making use of a differential method. Erbium was determined in the Yb-Lu pair; mathematical treatment of the results showed the errors to be random in character, but the standard deviation was fairly appreciable. The methods employed permitted the determination of Er in amounts from 3 to 10% ($9 \times 10^{-5} \text{ M} - 3 \times 10^{-4} \text{ M}$) in Ta and from 5 to 10% ($1.5 \times 10^{-4} \text{ M} - 3.0 \times 10^{-4} \text{ M}$) in Ho, and the determination of Yb in amounts from 15 to 30% ($4.5 \times 10^{-4} \text{ M} - 9.0 \times 10^{-4} \text{ M}$) in Lu. Orig. art. has: 6 figures and 4 tables.

SUB CODE: 07/ SUM DATE: 02Apr65/ ORIG REF: 006

Card 2/2

L 07162-67 EWP(1)/EWT(m) RM

ACC NR: AP6028198

SOURCE CODE: UR/0189/66/000/002/0080/0082

AUTHOR: Romantseva, T. I.; Gromova, M. I.; Peshkova, V. M.

20
13

ORG: Analytical Chemistry Department (Kafedra analiticheskoy khimii)

TITLE: Study of complexing in the system neodymium - 5,7-dichlorooxine - amyl acetate - water

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 2, 1966, 80-82

TOPIC TAGS: neodymium compound, stability constant, chelate compound

ABSTRACT: Complexing between Nd and 5,7-dichlorooxine (Cl_2OX) was studied in the system $\text{Nd} - \text{Cl}_2\text{OX} - \text{amyl acetate} - \text{H}_2\text{O}$. The overall and successive stability constants of the complex formed were calculated by the methods of (1) Bjerrum (graphically and by computation) and (2) Dyrssen and Sillen. The complex was found to have the composition $\text{Nd}(\text{Cl}_2\text{OX})_3$. The overall stability constant is -4.37 , whereas the corresponding constant for the $\text{Nd} - \text{Cl}_2\text{OX} - \text{chloroform} - \text{H}_2\text{O}$ system is -4.58 . This indicates that the advantage of amyl acetate over chloroform in extracting dichlorooxine complexes of rare earths lies in the fact that the extraction with amyl acetate begins in a more acidic medium, i. e., under conditions where the rare earth ion cannot hydrolyze. Orig. art. has: 3 figures, 1 table and 1 formula.

SUB CODE: 07/ SUBM DATE: 21Jul65/ ORIG REF: 002/ OTH REF: 004

Cord 1/1 *hls*

UDC: 543.7 546

ALEKSEYEV, A.F.; BORISENKO, A.P.; GLIKSON, V.I.; GROMOVA, N.F.; KRASOVSKAYA, A.I.; NOVIKOVA, M.M.; OVCHAROVA, A.I.; KHVOYNIK, P.I.; CHURAKOV, V.P.; SHASTITKO, V.M.; GEORGIYEV, Ye.S., red.; SHIL'DKRUT, V.A., red.; LEVCHUK, K.V., red.; LEKANOVA, I.S., tekhn.red.

[Prices on the world capitalistic market; a handbook] TSeny mire-
vogo kapitalisticheskogo rynka; spravochnik. Moskva, Vneshtorgisdat,
1958. 391 p. (MIRA 12:7)

1. Moscow. Nauchno-issledovatel'skiy kon'yunkturnyy institut.
(Prices)

ALEKSANDROV, P.A., kand.arkhitektury; GROMOVA, N.M., kand.farmatsevticheskikh nauk; KAPITSA, N.K., arkhitektor; SAMSONOV, G.A., arkhitektor; DANOVSIIY, V.F., arkhitektor, nauchnyy red.; OSKLEDETS, Z.M., red. izd-va; GILSON, P.G., tekhn.red.

[Auxiliary therapeutic departments of general hospitals; manual on the planning of pharmacies, laboratories, and physical therapy departments] Lechebno-vspomogatel'nye otdeleniya bol'nits obshchego tipa; posobie dlia proektirovaniia aptek, laboratorii, fizioterapevticheskikh otdelenii. Moskva, Gos.izd-vo lit-ry po stroit., arkhitekt. i stroit.materialam, 1960. 122 p. (MIRA 14:2)
(HOSPITALS--CONSTRUCTION)

GROMOVA, N.M.; KOGAN, A.P.

Standardization of the work of employees in self-supporting
pharmacies. Method of calculating staff composition according
to indexes of commodity turnover. Report no. 1. Apt. dele 9
no. 4:29-36 J1-Ag '60. (MIRA 13:8)
(DRUGSTORES) (WORK MEASUREMENT)

GROMOVA, N.M.

Planning the location of hospital pharmacies. Apt. delo 9 no. 5:35-
40 S-0 '60. (MIRA 13:10)

(HOSPITAL PHARMACIES)

GROMOVA, N.M.; KOGAN, A.P.

~~Standardization~~ of the work of employees in self-supporting pharmacies.
Standardization of the work of pharmacists' assistants. Report No. 2.
Apt. delo 9 no.6:35-40 N-D '60. (MIRA 13:12)
(DRUGSTORES)

GROMOVA, N.M.; SHURYGINA, L.M.; KARIKH, M.T.

Planning self-supporting pharmacies. Apt. delo 11 no.2:7-18 Mr-Ap
'62. (MIRA 15:5

1. TSentral'nyy aptechnyy nauchno-issledovatel'skiy institut.
(DRUGSTORES)

KULAKOV, D.V., arkh., red.; GRUBOVA, K.N., red. Farmats. nauk,
red.

[Instructions on the designing of drugstores. approved by
the State Committee for Construction and Architecture At-
tached to the Committee for Construction of the U.S.S.R.
on March 31, 1964.] Ukazaniya po proektirovaniyu aptek po
grazhdanskomu stroitel'stvu i arkhitekture pri Gosstroe
SSSR 31 marta 1964 g. Moskva, Stroizdat, 1964. 18 p.
(BIA 15:9)

1. Russia (1963- U.S.S.R. Komitet po grazhdanskomu
stroitel'stvu. 2. Gosudarstvennyy komitet po grazhdan-
skomu stroitel'stvu i arkhitekture pri Gosstroe SSSR
(for Kulakov). 3. Tsentral'nyy aptechnyy nauchno-issledov-
vatel'skiy institut Ministerstva zdravookhraneniya SSSR
(for Gromova).

GROMOVA, Nina Pavlovna; GRINGAUZ, S., redaktor; YAKOVLEVA, Ye., tekhnicheskii redaktor

[Visual aids for propaganda on collective farms] Nagliadnaia agitatsiia v kolkhose. [Moskva] Voskovskii rabochii, 1956. 61 p. (MIRA 9:11)

1. Sekretar' partiynoy organizatsii kolkhosa imeni XIX partiynogo s'yezda, Kashirskogo rayona, Moskovskoy oblasti.
(Adult education)

L 66343-67 ENP(j)/EMI(m) IJF(c) RM/NN

ACC NR: AP6030325

(A, N)

SOURCE CODE: UR/0153/66/009/003/0486/0490

AUTHOR: Gul', V. Ye.; Kovriga, V. V.; Rogovaya, E. M.; Gromova, N. P.

ORG: Department of Polymer Chemistry and Technology, Moscow Technological Institute of the Meat and Dairy Industry (Kafedra khimii i tekhnologii polimerov, Moskovskiy tekhnologicheskii institut myasnoy i molochnoy promyshlennosti)

TITLE: Study of the effect of supermolecular structures of isotactic polypropylene on its mechanical properties

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 3, 1966, 486-490

TOPIC TAGS: polypropylene plastic, polymer structure, mechanical property

ABSTRACT: The authors continue their study of the relationship between the crystal structure and mechanical properties of polypropylene by considering the relationship between the strength characteristics (breaking stress and elongation at rupture) and the size of spheroidal aggregates in films of isotactic polypropylene. The dynamic degree of crystallinity of the films was determined from NMR data, and found to remain unaffected by the formation of spherulites of various sizes. The strength characteristics decrease substantially with increasing spherulite size. In the presence of spherulites $\geq 165 \mu$ in size, brittle failure of the material takes place under the deformation conditions employed. Failure along the spherulite boundaries and in the spherulites themselves is equally probable. The causes of change in the character of

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UDC: 541.6

L 06343-67
ACC NR: AP6030325

the stress-strain relationship for films with various spherulite sizes are analyzed. Authors express their thanks to I. Ya. Slonim for his assistance in the recording of NMR spectra. Orig. art. has: 6 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 02Jun64/ ORIG REF: 004

Card 2/2 mlf

L-12010-65

EWT(m)/EPF(c)/ENP(j)/T Pc-4/Pr-4 .RM

ACCESSION NR: AP4047217

S/0190/64/006/010/1868/1870 B

AUTHOR: Gul', V. Ye.; Kovriga, V. V.; Rogovaya, E. M.; Gromova, N. P.

TITLE: Structural changes in specimens of crystalline polymers during their breakdown

SOURCE: Vy*skomolekulyarny*ye soyedineniya, v. 6, no. 10, 1964, 1868-1870

TOPIC TAGS: polypropylene, crystalline structure, spherulite, spherulite deformation, spherulite breakdown

ABSTRACT: Changes of the initial crystalline structures of polypropylene prepared under various conditions have been studied during mechanical failure with the MKU-1 microscope. The experiments were conducted at 20C with films of polypropylene containing spherulites varying in size from 25 to 105 μ . The films were subjected to uniaxial deformation at a rate of 10 mm/mm. It was shown that, regardless of size, all spherulites melt during deformation, and new fibrous structures are formed. Failure of polypropylene specimens containing fine

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ACCESSION NR: AP4047217

spherulites (diameter, several tens of microns) causes melting of these spherulites and gives rise to new crystalline formations oriented in the direction of the deforming force. Failure of specimens containing large spherulites (diameter, over 100 μ) is accompanied by their disintegration into fragments which form oriented crystalline structures. The strength of polypropylene specimens is affected by structural changes of fine or large spherulites during deformation and failure. Orig. art. has 7 figures."

ASSOCIATION: Moskovskiy tekhnologicheskij institut myasnoy i molochnoy promyshlennosti (Moscow Technological Institute of the Meat and Milk Industry)

SUBMITTED: 19Dec63

ENCL: 00

SUB CODE: OC, SS

NO REF SOV: 006

OTHER: 000

ATD PRESS: 3122

Card 2/2

AGRANOVSKAYA, I.A.; ALYUSHINSKIY, Yu.A.; ASATKINA, Ye.F.; BOYTSOVA, Ye.P.;
BOCHARNIKOVA, A.D.; VOYEVODOVA, Ye.; GROMOVA, N.S.; ZAUYER, V.V.;
MARTYNOVA, Z.I.; PANOVA, L.A.; POKROVSKAYA, I.M.; ROMANOVSKAYA, G.M.;
SEDOVA, M.A.; STEL'MAK, N.K.; KHAYKINA, S.L.; EDEL'SHTEYN, L.I.
[deceased]; MAKRUSHIN, V.A.; tekhn.red.

[Atlas of upper Cretaceous, Paleocene and Eocene spore and pollen
complexes in certain regions of the U.S.S.R.] Atlas verkhnemelovykh,
paleotsenovykh i eotsenovykh sporovo-pyl'tsevykh kompleksov nekotorykh
raionov SSSR. Leningrad. 1960, 574 p. (Leningrad. Vsesoiuznyi geologi-
cheskii institut. Trudy, vol.30). (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut
Ministerstva geologii i okhrany nedr SSSR (for Alyushinskiy, Asatkina,
Boytsova, Gromova, Panova, Pokrovskaya, Romanovskaya, Sedova, Stel'mak,
Edel'shteyn). 2. Ural'skoye geologicheskoye upravleniye Ministerstva
geologii i okhrany nedr SSSR (for Agranovskaya, Bocharnikova, Marty-
nova). 3. Severo-Vostochnoye geologicheskoye upravleniye Ministerstva
geologii i okhrany nedr SSSR (for Voyevodova, Khaykina). 4. Lenin-
gradskiy filial Gidroproyekta Ministerstva elektrostantsiy (for Zauyer).
(Palynology)

SAL'NIKOV, B.A.; GROMOVA, N.S.; SHTEMPEL', B.M.; AZHGIREVICH, L.F.;
SAL'NIKOVA, L.L.; SINITSYN, V.M., doktor geolog.-mineral.nauk,
otv.red.; MORACHEVSKIY, D.Ye., red.izd-va; KUZNETSOV, G.V.,
red.izd-va; ZENDEL', M.Ye., tekhn.red.

[History of Paleogene coal accumulation in Sakhalin] Istoriia
paleogenovogo uglenakopleniia na territorii Sakhalina.
Moskva, Izd-vo Akad. nauk SSSR, 1963. 167 p. 22 plates.
(Akademiia nauk SSSR. Laboratoriia geologii uglia. Trudy,
no.17). (MIRA 16:2)

(Sakhalin—Coal geology)

L 65040-65 EWT(1)/EWG(v) GW

ACCESSION NR: AP5022920

UR/0362/65/001/009/0952/0963
551:521.32

AUTHOR: Gromova, N. V.; Feygel'son, Ye. M.
44,55

TITLE: Outgoing radiation in a cloudy atmosphere

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 9, 1965, 952-963

TOPIC TAGS: optical thickness, atmosphere physics, albedo, outgoing radiation, cloud reflecting properties, cloud albedo 12,55,44

ABSTRACT: The angular and spectral distribution of the radiation escaping from the atmosphere has been calculated for the spectral range of 0.4—0.95 μm beyond the absorption bands and for various heights and thicknesses of the cloud layer. The albedo of the layer was determined as a function of its thickness and the position of the sun, as proposed by Ye. M. Feygel'son. Measurements of the solar energy were made with aircraft-borne spectrophotometer with interference filters in vertical soundings of the atmosphere at 500-m intervals up to a height of 6—6.5 km. The article is divided into

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3

ACCESSION NR: AP5022920

three parts: 1) thickness of the spectral optical layers of the atmosphere; 2) reflecting properties of clouds; 3) spectral brightness of the escaping radiation, fluxes, and albedo. It is concluded that at any wavelength in the visible part of the spectrum, during any season, clouds having the same optical thickness, regardless of their height level, emit approximately equal amounts of light beyond the limits of the atmosphere. The nature of the light reflected from clouds of different thicknesses is essentially distinctive. Orig. art. has: 12 figures and 7 tables. [JJ]

ASSOCIATION: Institut fiziki atmosfery, Akademiya nauk SSSR
(Institute of Physics of the Atmosphere, Academy of Sciences, SSSR)

SUBMITTED: 21Feb65

ENCL: 00

SUB CODE: ES

NO REF SOV: 007

OTHER: 005

ATD PRESS: 4084

Card

2/2

GROMOVA, O M.

PHASE I BOOK EXPLOITATION

316

Akademiya nauk SSSR. Institut teoreticheskoy astronomii.

Astronomicheskiy yezhegodnik SSSR na 1960 g. (Astronomical Yearbook of the USSR for 1960) Moscow, Izd-vo AN SSSR, 1957. 1,7000 copies printed. Supplement: Pokrytiya zvezd lunoyu vidimyye v ... 1958-1959 gg. (Occultations Visible in ... 1958-59) 60 p. 1,700 copies printed.

Resp. Ed.: Subbotin, M.F., Director, Institute of Theoretical Astronomy, AS USSR, Corresponding Member of the Academy.

PURPOSE: This book is published to serve as an astronomical yearbook.

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Astronomical Yearbook of the USSR for 1960 (Cont.)

316

COVERAGE: The growth of theoretical astronomy and the application of advanced computation techniques are the factors which have forced a change in the astronomical yearbooks. The astronomical yearbook of the USSR for 1960 includes changes made to comply with the decisions of the International Astronomical Union. These changes are indicated in the chapter "Explanation of the Yearbook". Starting with the 1960 issue of ~~this~~ yearbook the coordinates of the Sun, the Moon and the planets will not be calculated by the Institute of Theoretical Astronomy of the Academy of Sciences, USSR, but will be taken from the office of the Nautical Almanac (i.e., on the basis of the decisions of the International Astronomical Union), and thus basic data in all countries will be identical. Soviet personalities and their contributions to the 1960 edition are mentioned in the introduction. The reduction of the ephemeris of the sun and the moon to the form now used in the yearbook was carried out by Mal'kova, A.G. and Mazing, G.A. Nutation was calculated using Woolard's new formulas on the BESM high-speed computer of the Institute of Precise Mechanics and Computing Techniques, Academy of Sciences, USSR, by Zagrebin, D.B.,

Card 2/14

Astronomical Yearbook of the USSR for 1960 (Cont.) 316

Gromova, O.M., and Paletova, A. Ya. Reduction factors (algebraic system), apparent places of ten-day stars, and of stars close to Polaris were calculated on punch card-calculating machines under direction of Zhelaznyak, M.B., and Fursenko, M.A., by the methods of Kulikov, D.A. Preparation of the initial material for these chapters of the yearbook was carried out by Mitrofanova, E.A. (supervisor), Gromova, O.M., Mazing, G.M., Mashinskaya, T.I., Poznyak, G.M., Shumikhina, K.G., Gutkina, P.A. and Suslov, A.K. Other calculations for the 1960 yearbook and the persons by whom they were executed are: heliocentric coordinates of large planets - Gromova, O.M., and Mal'kova, A.G.; reduction factors (trigonometric system) - Mitrofanova, E.A., and Shumikhina, K.G.; mean places of stars - Mitrofanova, E.A., Zheleznyak, M.B., Gromova, O.M., and Shumikhina, K.G.; tables for determination of the latitude by an observed altitude of Polaris - Shumikhina, K.G., and Poznyak, G.M.; ephemeris of Polaris - Mal'kova, A.G., and Shumikhina, K.G.; occultations of the sun and the moon - Mitrofanova, E.A., Gromova, O.M., and Fursenko, M.A.; planetary configurations - Mitrofanova, E.A.

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Astronomical Yearbook of the USSR for 1960 (Cont.) 316

and Gromova, O.M.; physical coordinates of the Sun - Gromova, O.M., Shumikhina, K.G.; physical coordinates of the Moon - Mazing, G.A., Mashinskaya, T.I.; ephemeris for the illuminated disc of Mercury and Venus - Abalakin, V.K., Mashinskaya, T.I., Gromova, O.M., Shumikhina, K.G.; physical coordinates of Mars - Mitrofanova, E.A., Mal'kova, A.G., Mazing, G.A., and Fursenko, M.A.; Physical coordinates of Jupiter - Abalakin, T.I., and Mashinskaya, T.I., rings of Saturn - Gromova, O.M. and Shumikhina, K.G.; sunrise and sunset - Gromova, O.M.; moonrise and moonset - Gutkina, P.A., and Shumikhina, K.G.; change phases of the moon, perigee and apogee - Mazing, G.A., Mashinskaya, T.I. The preparation of the manuscript for printing was done by Frolova, A.I. The explanations were reworked by Kalikov, D.K., and Proskurin, B.F. Organization of the calculations and the printing of the Yearbook was carried out by Kulikov, D.K. and Proskurin, B.F., with the cooperation of Mitrofanova, E.A. and Zheleznyak, M.B. The author of the preface and the chief editor of the yearbook is M.F. Subotkin, Director, Institute of Theoretical Astronomy, and Corresponding Member, Academy of Sciences, USSR.

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PHASE I BOOK EXPLOITATION

SOV/5461

Akademiya nauk SSSR. Institut teoreticheskoy astronomii.

Astronomicheskiy yezhegodnik SSSR na 1962 g. (Astronomical Yearbook of the USSR for 1962) Moscow, Izd-vo Akademii nauk SSSR, 1960. 647 p. Errata slip inserted. 2,000 copies printed.

Sponsoring Agency: Institut teoreticheskoy astronomii Akademii nauk SSSR.

Resp. Ed.: M. F. Subbotin, Director of the Institute of Theoretical Astronomy of the Academy of Sciences USSR, Corresponding Member, Academy of Sciences USSR.

PURPOSE: This book is intended for astronomers and geophysicists.

COVERAGE: The Astronomical Yearbook of the USSR for 1962 has been compiled in accordance with changes proposed by the International Astronomical Union to member organizations at its meeting in 1958. In addition to usual

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Astronomical Yearbook (Cont.)

SOV/5461

information on the Sun, Moon, Earth, and planets, the Yearbook contains the ephemerides of the lunar crater Moesting A, which until 1960 were published by the Berliner Astronomisches Jahrbuch, [Berlin Astronomical Yearbook], and whose regular publication has now been undertaken by the Institute of Theoretical Astronomy of the USSR at the request of the Union's Committee on Ephemerides. The solar, lunar, and planetary coordinates in the Yearbook are based on data supplied by the British Nautical Almanac as stipulated by the Astronomical Union. The material in the Yearbook was compiled and prepared by the following scientists: computation of ephemerides of the lunar crater Moesting A on high-speed computer BEMS at the Vychislitel'nyy tsentr AN SSSR (Computer Center AS USSR) - D. K. Kulikov; reduction of solar and lunar ephemerides - A. G. Mal'kova and G. A. Mazing; computation of nutation on high-speed computer BEMS - D. V. Zagrebin, O. M. Gromova and A. Ya. Faletova; computation of reduction values of visible positions of ten-day and near-polar stars - M. B. Zheleznyak and M. A. Fursenko; preparation of original data on visible positions of ten-day and near-polar stars.

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Astronomical Yearbook (Cont.)

SOV/5461

E. A. Mitrofanova (in charge), O. M. Gromova, G. A. Mazing, T. I. Mashinskaya, G. M. Poznyak, K. G. Shumikhina, and P. A. Gutkina; heliocentric coordinates of the large planets - O. M. Gromova, A. G. Mal'kova; reduction values (trigonometric system) - E. A. Mitrofanova, and K. G. Shumikhina; mean positions of stars - E. A. Mitrofanova, M. B. Zheleznyak, O. M. Gromova, K. G. Shumikhina, M. A. Fursenko; solar and lunar eclipses - E. A. Mitrofanova, M. A. Fursenko; planetary configurations - E. A. Mitrofanova, O. M. Gromova; ephemerides for physical solar observations - P. A. Gutkina, T. I. Mashinskaya; ephemerides for physical lunar observations - G. A. Mazing, P. A. Gutkina, K. G. Shumikhina; ephemerides of the illumination of the discs of Mercury and Venus - T. I. Mashinskaya, G. M. Poznyak; ephemerides for physical observations of Mars - G. M. Mazing, T. I. Mashinskaya; ephemerides for physical observations of Jupiter - T. I. Mashinskaya, E. A. Mitrofanova; Saturn's rings - G. A. Mazing, T. I. Mashinskaya; sunrise and sunset - A. I. Frolova; rising and setting of the moon - P. A. Gutkina and K. G. Shumikhina; altitudes and azimuths of the Polar Star - A. G. Mal'kova

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Astronomical Yearbook (Cont.)

SOV/5461

and K. G. Shumikhina; table for determining latitude by the altitude of the Polar Star - K. G. Shumikhina and P. A. Gutkina; preparation of manuscript for publication - V. G. Kudinova; review and edition of "Explanatory Notes", D. K. Kulikov. There are no references.

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(HEAR:--DISEASES)

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Flood in the Kan, Agul, and Biryusa Rivers in August 1960 and methodology of calculating the runoff of rain. Trudy GGI no.99:177-194 '62. (MIRA 15:9)

(Kan River—Floods)

(Biryusa River—Floods)

GROMOVA, R.V.

Correlation of data on the maximum rain runoff in the Lake
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5/127/61/000/007/018/016
1075/1535

Author: Kreshinsky, S.M., Gramova, S.P., Kalikman, V.L.
and Mansky, Ya. S.

Topic: Influence of Diffusion Porosity in a Nichrome Alloy
on the Sintering of Nickel and Chromium Powders

Periodical: Metallovedeniye i termicheskaya obrabotka metallov,
1961, No 7, pp 52-54

In studying the process of sintering of nickel and chromium the authors discovered some unusual changes of the lattice period and the shape of the lines on X-ray diffraction patterns of the nichrome 142 (X20) (80x20). For the investigations, specimens of various densities (porosities 10-15, 25-30 and 40-50) were prepared by cold pressing. The specimens were sintered in a hydrogen stream at 1150°C for 8 hours. X-ray diffraction patterns were made using a molybdenum reference standard with copper radiation. The lattice period was calculated from the line 111. It was found that during sintering the lattice period did not change monotonously but in jumps. Fig. 1 shows the dependence of the lattice period, d , of sintered
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Influence of Diffusion Porosity . . . 5/129/61/000/007/014/016
2073/535

nichrome on the sintering time, hours, for the following initial periods: curve 1 - 15-20%, curve 2 - 30%, curve 3 - 40-45%. During the first three hours of sintering the maxima and minima of the lattice periods did not coincide for specimens with various porosities. However, during the later stages of sintering they are synchronous for all the specimens. There is a similar change in the blurring of the lines on the X-ray diffraction patterns: the lines are blurred or sharp right up to the division of the K_{α} doublet. The sharp lines correspond to larger lattice periods. Similar phenomena were observed by A. S. Gorelik (Ref. 1, Nauchnyy doklady vysshey shkoly, Metallurgiya, No. 2, 1959) during sintering of tungsten alloy. These phenomena indicate that sintering of nickel and chromium renders does not change monotonously the uniformity of the solid solution. This can be explained on the basis of results of the study of the formation and growth of sub-micropores in the nichrome alloy. Porosity was observed in an alloy of a similar composition (21 wt) during the distillation of chromium in vacuum at various temperatures. The dimensions of the sub-micropores were determined by studying the low angle scattering of X-rays. Fig. 2 shows the test results.

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used for studying the low angle scattering (1 - X-ray tube, 2 - monochromator, 3 - specimen, 4 - collimator, 5 - Geiger-Muller counter, 6 - counting circuit). It was found that sub-microscopic pores of a size of several hundred Angstrom form in the nichrome during the process of evaporation of chromium. Fig.3 shows the dependence of the average pore dimensions, \bar{R} , Å, and of the total porosity (loss in weight), ΔP , mg, in nichrome subjected to vacuum evaporation at various temperatures as a function of time, \sqrt{t} , min for the sintering temperatures 1200°C (plot a) and 1350°C (plot b). The dimensions of the sub-micropores also did not change monotonously; the lower the evaporation temperature the larger will be the number of extremal points on the curve $R = f(\sqrt{t})$. The observed phenomenon can be explained only by the healing of the formed sub-micropores, since the maximum dimension of the pores was considerably below 1000 Å. Healing proceeds as a result of chromium diffusion; its partial diffusion coefficient in nichrome is considerably higher than the diffusion coefficient of nickel (Ref.4: S. Dashman: "Scientific fundamentals of vacuum engineering", Russian translation, 1950).

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In this case healing is possible if the flow of chromium atoms to the pore is larger than the flow of vacancies. After the pores have healed, sections will remain which are chromium enriched and the internal flow of vacancies will cease. The appearance of concentration non-uniformities leads to blurring of the lines on the X-ray pattern and to a reduction of the lattice period. By means of low angle scattering it is also possible to detect the decrease in the pore dimensions. Then, the chromium concentration begins to equalize in the alloy and the concentration of vacancies will increase; this produces a narrowing of the lines on the Debye pattern. An increase in the concentration of the vacancies leads to the formation of new and growth of remaining pores. The concentration of vacancies will decrease in jumps and the process of healing of the pores will start afresh. This process appears to continue until a certain quantity of chromium is evaporated from the alloy. There are 3 figures and 4 references: 3 Soviet and 1 a Russian translation.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

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Ed. (Title page): A. D. Dargun; Ed. (Index book): L. V. Klimukov;
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REMARK: This collection of articles is intended for neurologists and neurologists.

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